MUSCULAR-SKELETAL DISORDERS – Cost Studies

PMS9

BIOLOGIC THERAPY PATTERNS AND ASSOCIATED COSTS IN RHEUMATOID ARTHRITIS PATIENTS WHO INITIATED A TUMOR NECROSIS FACTOR ANTAGONIST OVER TWO YEARS

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OBJECTIVES: The primary objective was to examine treatment switching and associated costs in patients with RA who initiated a TNFα antagonist. **METHODS:** Patients newly initiated on a TNFα antagonist therapy were identified in the US OptumInsight Impact database. Patients (N=4278) had a six-month baseline with no biologic DMARD use prior to the initiation of etanercept (N=1705), adalimumab (N=1249) or infliximab (N=1324). The index period was from 2007-2008, and patients were followed for 24-months. Two–year health care utilization and treatment patterns were examined, focused on drug continuation and switching. **RESULTS:** The majority of patients remained on their initial treatment (etanercept, N=1386 of 1705, 81%; adalimumab, N=939 of 1249, 75%; infliximab, N=1031 of 1324, 78%). Nearly half of these patients were continuously treated over the 24 month period without a 90 day gap (etanercept, N=651, 47%; adalimumab, N=469, 50%; infliximab, N=552, 54%). Over 80% of those who switched did so only once. Most patients who changed switched to a similar route of administration (65-72% for SC to SC switchers; 72% for IV to IV switchers). There were no differences in Charlson Comorbidity Index (CCI), except those who switched first to a non-TNFα antagonist (i.e., abatacept, certolizumab pegol or rituximab) had more comorbidities than their TNFα antagonist counterparts (mean CCI of 2.0 versus 2.4 in the 2-year follow-up, $p=0.002$). Patients who switched had higher total costs than those who did not switch ($p<0.001$), and those who switched multiple times had significantly higher total costs than those who switched only once (single-switch mean=$59352, N=726; multiple-switch mean=$71366, N=161, $p<0.001$). **CONCLUSIONS:** RA patients who initiate a TNFα antagonist and subsequently need to change therapies incur higher cost, particularly those who switched multiple times. When patients switched, the initial route of administration was maintained. Consideration should be given when switching treatment in this patient population.

PMS10

THE COST OF HOSPITALISATION FOR KNEE OSTEOARTHRITIS IN FRANCE IN 2010

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OBJECTIVES: Evaluate the cost of hospitalization of knee osteoarthritis patients in France in 2010. **METHODS:** For hospital stays (medical, surgery and obstetrics)and for patients treated under Follow-up care and Rehabilitation (formerly &#x0018; halfway house&#x0019;), use of the PMSI data. The evaluation we carried out is based on the last 2 years of available data - 2009 and 2010. **RESULTS:** In France, around 85 000 patients are treated yearly in hospital for knee osteoarthritis. They are made up of 62% women and 38% men, with an average age of 70. The average hospital stay was 9 days (9.1 average per patient per year). The average annual cost of hospital treatment for one patient is estimated at around €7700 61% of patients are then treated with rehabilitation, of which 67% are women. The average age of these patients is 71. Each patient stayed for an average of 35 days, either full or partial hospitalization with functional reeducation or medical follow-up treatment. The annual treatment cost of a patient in rehabilitation is estimated at €6986In total, the average annual cost for all patients treated in hospital (medical/surgery/obstetrics + rehabilitation) for knee osteoarthritis in 2010 is estimated at €11,961*. In total, the overall annual cost of one patient treated in hospital (medical/surgery/obstetrics + rehabilitation) for knee osteoarthritis in 2010 is estimated at €1322 561 546. **CONCLUSIONS:** The last study evaluating the cost of osteoarthritis in France (COART - Le Pen and coll, Revue du rhumatisme, December 2005) reported 127,000 short-stay admissions, 175,000 follow-up and/or rehabilitation treatment days, and 118,000 knee or hip replacements, the overall cost of hospitalizations is therefore 820 million euros in 2002. Our evaluation demonstrates that this cost evaluation is outdated, as the amount is lower than the overall cost of hospitalizations linked to osteoarthritis of the hip

PMS11

THE COST OF HOSPITALIZATION OF HIP OSTEOARTHRITIS PATIENTS IN FRANCE IN 2010

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OBJECTIVES: Evaluate the cost of hospitalization of hip osteoarthritis patients in France in 2010. **METHODS:** For hospital stays (medical, surgery and obstetrics)and f or patients treated under Follow-up care and Rehabilitation (formerly 'halfway house'), use of the PMSI data. The evaluation we carried out is based on the last 2 years of available data - 2009 and 2010. **RESULTS:** In France, around 90,000 patients are treated every year in hospitals for hip osteoarthritis (figures from 2009/2010). 55% of these patients are female, and 45% are male, with an average age of 70. The average hospital stay was 9 days (9.5 average per patient per year). The average annual treatment cost for one patient is estimated at around €7100 44% of patients are then treated with rehabilitation, of which 66% are women. The average age of these patients is 73. Each patient stays for an average of 32 days, either full or partial hospitalization with functional reeducation or medical follow-up treatment. The average annual treatment cost of a patient in rehabilitation is estimated at around €6593. In total, the annual cost of a patient treated in hospital (hospital + rehabilitation) for hip osteoarthritis in 2010 is estimated at €10,000. In total, the overall annual cost for all patients undergoing hospital treatment in 2010 is estimated at €1,145,942,911. **CONCLUSIONS:** The last study evaluating the cost of osteoarthritis in France (COART - Le Pen and coll, Revue du rhumatisme, December 2005) reported 127 000 short-stay admissions, 175,000 follow-up and/or rehabilitation treatment days, and 118 000 knee or hip replacements, the overall cost of hospitalizations is therefore 820 million euros in 2002. Our evaluation demonstrates that this cost evaluation is outdated, as the amount is lower than the overall cost of hospitalizations linked to osteoarthritis of the hip.

PMS12

NUMBER NEEDED TO TREAT (NNT), COST PER RESPONDER (CPR) AND BUDGET IMPACT (BI) OF TNF INHIBITORS (TNFI) IN THE TREATMENT OF PSORIATIC ARTHRITIS (PSA)

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OBJECTIVES: Estimate the NNT, CPR and U.S. BI of TNFi in PsA, using clinical assumptions from an independent National Institute for Health and Clinical Excellence (NICE) systematic review. **METHODS:** Comparative data were sourced from a February 2011 NICE systematic review and Bayesian indirect comparison of adalimumab (ADA), etanercept (ETA) and infliximab (IFX) in PsA. Primary outcomes included Psoriatic Arthritis Response Criteria (PsARC) and Psoriasis Area and Severity Index (PASI) 75% response. NICE adjusted outcomes for each TNFi at 12 or 14 weeks vs a standardized placebo response, within each outcome, and these acute results were projected to 52 weeks. Based on this data, this analysis applied biologic costs from January 2012 Wholesale Acquisition Costs and labeled dosing over 52 weeks to derive NNT, CPR and BI. **RESULTS:** NICE reported results from six trials, deemed patient characteristics across trials consistent and assessed quality of all trials as good. The authors of the independent NICE review stated that across all outcomes of joint and skin disease at 12 weeks, IFX was associated with the highest probabilities of response. These expected placebo-adjusted response rates were as follows – PsARC: ADA (33.8%), ETA (46.4%), IFX (54.6%); PASI 75: ADA (43.4%), ETA (13.3%) and IFX (72.5%). This analysis then derived that 52-week CPR was lowest for IFX for all outcomes. Also, for PASI 75, NNT to achieve 100 responders was 230.9, 751.9 and 137.9 for ADA, ETA and IFX respectively, with corresponding annual biologic costs to achieve 100 responders of $5.75M; $17.69M and $3.33M. **CONCLUSIONS:** In this analysis of projected 52 week relative outcomes and expected biologics costs, the incremental annual budget required to achieve 100 PASI 75 responders would be $2,422,816 or $14,360,355 greater if patients were initiated on ADA or ETA respectively, instead of IFX.

PMS13

MEDICATION ADHERENCE AND HEALTH CARE COSTS AMONG PATIENTS WITH OSTEOARTHRITIS INITIATING DULOXETINE VERSUS CELECOXIB

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OBJECTIVES: Celecoxib and duloxetine are FDA approved medications to treat osteoarthritis (OA). The purpose of this study was to evaluate the impact of medication choice between duloxetine and celecoxib on medication adherence and direct health care costs among patients with OA. **METHODS:** This retrospective cohort study assessed commercially-insured Marketscan OA patients aged 18-64 years who initiated duloxetine or celecoxib in 2009. All selected patients had 12 months continuous enrollment in the pre- and post-index periods, and were grouped into the duloxetine or celecoxib cohort based on the index agent. The first dispense date, preceded by no coverage of study medication in the prior 90 days, was defined as the index date. Both cohorts were then matched via propensity score. The propensity scores were calculated based on a logistic regression model adjusting for demographics, comorbidities, prior health care utilization and costs, and prior medication history. Medication possession ratio (MPR), proportion of patients with MPR≥0.8 and health care costs over the 12-month post-index period were compared between cohorts. **RESULTS:** The matched sample included 2719 patients in each group. Both cohorts had a mean age of 53 years, and were mostly females. Over the 12-month post index period, duloxetine-treated patients had significantly higher MPR (0.53 vs. 0.37, $p<0.001$) and higher proportion of patients with MPR ≥0.8 (34.6% vs. 14.6%, $p<0.001$) than celecoxib-treated patients. While the total health care costs over the 12-month post-index period were similar between the two cohorts ($22,125 vs. $22,108, $p=0.9834$), duloxetine-treated patients had significantly lower OA-related inpatient ($1,607 vs. $2,694, $p<0.001$) and outpatient costs ($530 vs. $933, $p<0.001$), compared to celecoxib-treated patients. **CONCLUSIONS:** OA patients initiating duloxetine had significantly higher medication adherence and lower OA-related inpatient and outpatient costs. The results, however, should be interpreted with caution due to the observational nature of the claims database.

PMS14

HEALTH CARE COSTS AND OPIOID USE AMONG PATIENTS WITH OSTEOARTHRITIS INITIATING DULOXETINE VERSUS OTHER TREATMENTS

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OBJECTIVES: To compare direct health care costs and opioid use over a 1-year period following initiation with duloxetine versus other standard of care (SOC) treatments among patients with osteoarthritis (OA). **METHODS:** This retrospective cohort study assessed commercially-insured Marketscan OA patients aged 18-64 years who initiated duloxetine or other treatments (celecoxib, opioids, venlafaxine,